[redacted] SAM

SYNAPSE

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THE CENTRAL PENNSYLVANIA TIMEX/SINCLAIR COMPUTER USERS GROUP
nonprofit support for the TIMEX/SNCLAIR line of computers and products

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**************************************
*                                    *
*  Title: Mini Watson Interface      *
*  By   : Charlie Day                *
*  For  : TS2068 with joystick       *
*                                    *
**************************************
```

A new age has entered into the computer revolution, the age of user friendliness. Apple has shown to the computer industry, with the MAC, that to the average user ease of use is much more important than raw power. I believe that Sinclair computers have long been as userfriendly as possible for a Z-80A chip and the most programmer friendly computer no matter what the microprocessor is. The 2068, although not specificly designed to have a user friendly interface, can easily be adapted to use an interface due to the flexibility of the machine. The program accompanying this article contains a scaled down version of an interface I designed to work with a business pack program I wrote called "Watson's Desk". (Ed. note: I will be reviewing Watson's Desk in the near future) Although this listing contains the bear essentials of the Watson interface, it does give you an idea of how a simple user interface can work.

Unlike the MAC, we have no mouse on the 2068 to free us from the keyboard; but we are able to use a joystick to simulate some of the features of a mouse. To begin type in lines 1700-1790 and lines 8500. After entering the lines run the short part of the program in memory. Make sure the joystick is in port #1. Move the joystick up and down, left and right. After you have the feel of moving the cursor around on the screen continue reading. The interface itself is very simple. Line 1700 is used to set up the counter used in the program and to display the main menu. Line 1720 places the cursor in the option box in front of the options listed on the screen; in this case the main menu. Line 1730 checks if the fire button is being pressed. If the fire button is being pressed then an option has been selected and the computer goes to the selected module. Line 1740 simply checks to see if the joystick is being moved. Lines 1750 and 1760 make sure the cursor is inside the limits set for the cursor. Line 1770 replaces the option box. Line 1780 is for audio feedback. Line 1810 sets up the screen for a module then sends the computer into the processing module for the chosen selection. When the module is complete it goes to a central option, line 8600, before returning to the main menu.

Now you can type in the rest of the program. The program itself is simple. I wrote it as part of my physics project for school. Please feel free to add options to Watson. Feel free to upgrade and use this mini-Watson interface as you wish. In the future I plan to show you how to make simple false windows and program overlays. As always I welcome any comments.

(Editors note: graphic characters and inverse characters that you need to enter in this program are represented in the following fashion: [inverse c] means to enter an inverse c at that location. [graphic 6,graphic 5,inverse c] means to enter the graphic characters on key 6 and key 5 followed by an inverse c)

```
100 REM Electric Equations
101 REM ***********************
102 REM ** By Charlie Day     **
103 REM ** Equations    from  **
104 REM ** Student Calculator**
```

continued on -page 3-

SAM

TABLE OF CONTENTS

MINI WATSTON (2068)------- PAGE 1
TABLE OF CONTENTS--------- PAGE 2
FROM THE EDITORS DESK----- PAGE 2
QL REVIEW (QL)------------ PAGE 4
GRADER (reply)------------ PAGE 7
ZXLR8 PT 1 (1000)--------- PAGE 8
ZXLR8 PT 2 (1000)--------- PAGE 8
ZXLR8 PT 3 (1000)--------- PAGE 9
ZXLR8 PT 4 (1000)--------- PAGE 9
TELECOMPUTING (2068)------ PAGE 10
T/S CONNECTION (reply)---- PAGE 14
SOFTBALL STATS (1000)----- PAGE 15
BINARY DEMO (1000/2068)--- PAGE 18
COMPUTERFEST (anncmnt)---- PAGE 18
MICRODRIVE FORMATTER (QL)- PAGE 19
R&R ELECTRONICS (ad)------ PAGE 22
T.A.S.FIX (ad)------------ PAGE 23
T/S CONNECTION (ad)------- PAGE 23
SUBSCRIPTION AND AD RATES LAST PGE

FROM THE EDITORS DESK

BY

ROBERT HEIL

First I would like to wish everyone a Happy New Year! And thank-you for being devoted subscribers. I notice that some of the subscriptions are about up and I would like those people to consider renewing their subscription. The mailing label on your newletter has the date of the last issue you will receive with your subscription. In the event you received one which has (gratis) on it then would you please consider becoming a new subscriber. This is the beginning of Synapses' 4th year of pubication and I hope to make it much better than this last year. The first thing you'll notice is that this whole newsletter is now wordproccessed and is back to the origional magazine size so that it should be much more readable. I would like to hear from you about what you think of the layout. With each edition I wish to make this newsletter more professional looking.

SYNAPSE would like to know what you as readers want to know, learn about, read, or do in the coming year. What products (hardware and software) would you like to see being sold. Are you still interested in T/S computing or have you moved on to another computer? What are you doing with your computer and what kind of set-up do you have? Write to me and let me know; your input is vital if I am continue including the things you want to read about.

FOR EXAMPLE: How many of you own modems and use the bulletin boards out there? Would you be interested in an article on putting together your own modem? Would you be interested in a SYNAPSE bulletin board?

The most recent interest for T/S owners is RGB monitors, disc drives, printers, and modems. I hope to be including in one of the near future issues a series of articles by Bob Gilder of the LIST group on interfacing disc drives to your computer. This will be a do-it-yourself type of article.

It has come to my attention that some of the newsletter publishers use material from Synapse without giving full credit to the author and Synapse. I had the opportunity of seeing a soon to be released book of TS/ZX programs which had a letter writing program from Jim Prout, a long standing member of SYNAPSE and the Central Pa Users Group. The program was given credit as coming from a users group in New York. All of the programs in the book were copyrighted and listed with the library of congress. This is very unfair since it was Jim Prout and Synapse who brought that particular program to our readers. That letter writing program is not to be copyrighted but is freeware for everyones FREE use. I would like to remind everyone that the material in this newsletter is the property of the author and Synapse. Other groups and publications can use the material only if they include the authors name and Synapse name with the reprinted article, and they must include the date of publication. SYNAPSE is part of a free exchange of information that requires honesty in determining who is the rightfull author. The gentleman who wrote that book of programs will be profiting from a program (possibly more than just one) which was meant for everyone for free.

continued on -page 19-

continued from -page 1-

```
 105 REM **    Math    Book    **
 106 REM ************************
1700 LET T$="Electrical Formulas
": LET x=4: LET c=1: INK 1: PAPE
R 5: BORDER 1: CLS : GO SUB 8500
1710 PRINT AT 4,0;"(o) Ohms"''"(
o) Amperes"''"(o) Volts"''"(o) C
apacitive Reactance"''"(o) Imped
ance"''"(o) Inductive Reactance"
''"(o) Watts"''"(o) Exit"
1720 PRINT OVER 1; FLASH 1;AT X,
1;"_"
1730 IF STICK (2,1)=1 THEN GO TO
 1800
1740 IF STICK (1,1)=0 THEN GO TO
 1730
1750 IF STICK (1,1)=2 AND X<17 T
HEN LET X=X+2: LET C=C+1: GO TO
1770
1760 IF STICK (1,1)=1 AND X>4 TH
EN LET X=X-2: LET C=C-1
1770 PRINT AT 4,0;"(o"''"(o"''"(
o"''"(o"''"(o"''"(o"''"(o"''"(o"
1780 BEEP .02,x
1790 GO TO 1720
1800 IF c=8 THEN CLS : PRINT "En
d of Program": STOP
1810 BORDER 0: INK 5: PAPER 0: C
LS : GO SUB 8500: PRINT AT 3,0:
GO SUB (c*100)+1900
1820 GO SUB 8600: GO TO 1700
2000 PRINT "OHMS = VOLTAGE/AMPER
S"''"Ohms (RESISTANCE) = R"'"Vol
ts (VOLTAGE) = E"'"Amps (CURRENT
) = I"''"R = E/I"
2010 INPUT "INPUT Volts ";E
2020 PRINT AT 15,0;"R = ";E;"/?"
2030 INPUT "INPUT Amperage? ";I
2040 PRINT AT 15,0;"R = ";E;"/";
I;" = ";E/I;" Ohms"
2050 RETURN
2100 PRINT "Amperage = VOLTS/RES
ISTANCE"''"Amps = I"'"Volts  =
E"'"Ohms  = R"''"I = E/R"
2110 INPUT "INPUT Volts ";E
2120 PRINT AT 15,0;"I = ";E;"/?"
2130 INPUT "INPUT Ohms ";R
2140 PRINT AT 15,0;"I = ";E;"/";
R;" = ";E/R;" Amperes"
2150 RETURN
2200 PRINT "Volts = AMPERAGE x R
ESISTANCE"''"Volts  = E"'"Amps
= I"'"Ohms = R"''"E = IR"
2210 INPUT "INPUT Amps ";I
2220 PRINT AT 15,0;"E = ";I;" X?
"
2230 INPUT "INPUT Ohms ";R
2240 print at 15,0;"E = ";I;" x
";R;" = ";I*R ;" Volts"
2250 RETURN
2300 PRINT "Capacitive Reactance
 ="'"1/2 x PI x FREQUENCY IN HER
TZ x FARADS"''"Capacitive Reacta
ance = X[invers C]"'"Frequency in
Hertz = F"'"Capacitor Value in Far
ads = C"''"X[inverse C] = 1/(2 x
 PI x F x C)"
2310 INPUT "INPUT Frequency ";F
2320 PRINT AT 15,0;"X[inverse C] =
 1/(2 x PI x ";F;" x ?)"
2330 INPUCT "INPUT Farads ";C
2331 PRINT AT 15,0;"[32 spaces]"
2340 PRINT AT 15,0;"X[inverse C] =
 1/(2 x PI x ";F;" x ";C;")"'"= ";
1/(2*PI*F*C);" Ohms"
2350 RETURN
2400 PRINT "Impedance = THE SQUA
RE ROOT OF (RESISTANCE SQUARED
 + REACTANCE SQUARED)"''"Impedan
ce = Z"'"Resistance = R"'"Reacta
nce = X"'"Reactance is  the Alg
ebraic sum of the inductive Reac
tance and  the Capacitive Reacta
nce."'"The ""[up arrow on h key]""
is the power symbol."''"Z = (R[up
arrow on h key]2 + x[up arrow on
h key]2 [up arrow on h key] .5"
2410 INPUT "INPUT Volts ";R
2420 PRINT AT 19,0;"Z = (";R;" [up
arrow on h key]2 + ? [up arrow on
h key]2) [up arrow on h key].5"
2430 INPUT "INPUT Reactance ";X
2440 PRINT AT 19,0;"Z = (";R;" [up
arrow on h key]2 +";X;"[up arrow
on h key]2)[up arrow on h key].5"'
"= ";(R[up arrow on h key]2+X[up
arrow on h key]2)[up arrow on h
key].5;" Ohms"
2450 RETURN
2500 PRINT "Inductive Reactance
 = 2 x PI x Frequency in Hertz x
Henrys"''"Inductive Reactance  =
 X[inverse L]"'"Frequency in Hertz
= F"'"Inductance value in Henry's
 ="''"X[inverse L] = 2 PI x F x L"
2510 INPUT "INPUT Frequency ";F
2520 PRINT AT 15,0;"X [inverse L]
 = 2 x PI x ";f;" x ?"
2530 INPUT "INPUT HENRYS ";L
2540 PRINT AT 15,0;"X[inverse L] =
 2 PI x ";F;" x ";L;'"= ";(2*PI*F*
L;" Ohms"
2550 RETURN
2600 PRINT "Watts Formulas";AT 9
,5;"(o) Volts and Amps";AT 11,5;
"(o) Amps and Ohms"
2605 LET x=9
2610 PRINT OVER 1; FLASH 1;AT x
,6;"_"
2611 IF STICK (2,1)=1 THEN GO TO
 2619
2612 IF STICK (1,1)=0 THEN GO TO
 2611
2613 IF STICK (1,1)=2 AND x<11 T
HEN LET x=x+2: GO TO 2618
2614 IF STICK (1,1)=1 AND x>9 TH
EN LET x=x-2
2618 PRINT AT 9,6;"o";AT 11,6;"o
": BEEP .05,x+10: GO TO 2610
2619 CLS : GO SUB 8500: PRINT ''
'
2620 IF x=11 THEN GO TO 2670
```

continued on -page 23-

```
QLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQ
L                                 L
A     QQQQQQQ       L             Q
L    Q       Q      L             L
Q    Q       Q      L             Q
L    Q       Q      L             L
Q    Q    Q  Q      L             Q
L    Q     Q Q      L             L
Q    Q      QQ      L             Q
L     QQQQQQQ        LLLLLLL      L
Q                                 Q
LQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQL
```

CAVEAT EMPTOR!

D J KRILL

Articles on the Sinclair QL have appeared in most of the major magazines and many of the writers have whetted our appetites.

But what about the other side of the "pond?" Writers and reviewers at the British magazines (and our own) have had hands-on activity for a few months and certainly have a better feel for the machine.

Here's what I have gleaned from articles in publications such as "Personal Computing", "ZX Computing", and the like.

For background, we should all be aware that the designers have gone through four (4) generations [ED. NOTE: perhaps more since this review was written] of rom. Each successive release contained errors that had to be corrected. While that situation caused havoc with those that had machines, Psion, the company responsible for the bundled software, found it necessary to update and/or rewrite much of its previous work. So the delays initially attributed to the software were generated by the rom problems.

It is important to understand that Sir Clive intended the QL to be his foray into the business world. Granted, someone will figure out a way to play games on it, [ED. NOTE: you should see the 3D chess game!] but, although the 68000 series of microprocessors is quick, a game machine it is not intended to be! (I know I'll eat those words, eventually)

That brings us to the first major quirk of the QL. The machine does not seem to be as "fast" as other 68000 based micros. For instance, the "Game of Life" viewed on a Macintosh gives the impression of a film in comparison to a slide show. If you have an opportunity, visit an Apple dealer and ask for a demonstration. The cell generation appears to take place in real time. It is, to say the least, a more realistic simulation.

But, you say, that's probably due to the way in which programs are written. And I agree with that statement!

However, "Personal Computing" magazine runs eight (8) benchmark programs when comparing and evaluating computers. Their comment is "For a 68000-fammily machine running at 7.5 MHz the QL seems very slow." The version they tested was a QL/AH and in all likelyhood was not the first nor the last of updated machines. [ED. NOTE: has anyone done any recent benchmark comparisons? We would all like to know the results.]

"Just how did the QL compare?" you ask. Here's a chart of the average results in seconds from the eight benchmark programs:

```
MICRO     0 3.5  14.8  15.6   58.5
          :  :     :     :      :
QL/AH     :  :     :     :      :
 68008    ****************      :
          :  :     :     :      :
HP 200/16 :  :     :     :      :
 68000    ****     :     :      :
          :  :     :     :      :
BBC MDL B :  :     :     :      :
 6502     **********     :      :
          :  :     :     :      :
SPECTRUM  :  :     :     :      :
 ZX-80    ***********************
          :  :     :     :      :
```

[ED. NOTE: it is unclear if a Spectrum was used or a ZX-80 was used for the benchmark that produced a time of 58.5 seconds.]

You will certainly generate your own conclusions from this limited test. However, I find it disconcerting to learn that a micro with a 6502 chip (the one Apples are based upon) is faster than a QL. At this point in time, the proposed price of a QL does not justify its lack of speed. [ED. NOTE: at the time of the introducton of the QL the asking was $500 and the machine was

continued on -page 5-

continued from -page 4-

not selling well at all. Now the price has dropped to under $300 and its sales are picking up rapidly. I suspect it will be the next most popular computer amongst the Timex/Sinclair users and will certainly draw a new crowd of people who may be disappointed with the other machines on the market]

The current thinking as to the cause of the slowness points to the basic interpreter. Whether or not that problem gets solved remains to be seen. I find it hard to beleve that Sinclair will market a product unable to at least match the competition whatever the retail price.

MICRODRIVES

The microdrives do not seem to be the item they are claimed to be. For the uninformed, the microdrives are tape decks built into the QL. But they do not use cassettes. Instead, continuous loop cartridges, available only from Sinclair at the present time, [ED. NOTE: the cartridges are now available through independant distributors, they are somewhat expensive and still hard to come by] provide program and data storage. Two drives are on board and it is presumed Sinclair will include a few blank cartridges in the package.

While Sinclair claims a minimum capacity of 85K, the actual figure varies from tape to tape. The reason seems to center around the formatting process. Without getting into the whys and wherefors of formatting, I should point out that formatting places certain data in specific areas or sectors of the tape. By using this method, the tape can stream past the heads until needed information is located. Although this process finds data quickly it tends to slow down the "save" procedure. The worst example to date has been backing-up the "Easel" business graphics program which took 10 minutes to copy. Until the "QDOS" and tape format details are made available, it is difficult to determine why such a long time is needed. [ED. NOTE: the microdrives are slower than disk drives but are faster than cassette tape systems]

KEYBOARD

As with any new computer, the keyboard layout must be road tested. I say this because the enter key is not under the little finger of the right hand as is the case with previous Sinclair machines. While this might not seem to be a problem to many of you, we touch typists will have to reach at least one inch farther.

"BIG DEAL!" you say. To which I reply: move your toothbrush to the other side of your bathroom sink and then keep track of how many times you automatically reach for the old location. It will take some getting used to.

You should also be aware of the elimination of single keystroke keywords. On the QL, commands will have to be typed out letter by letter. After working on an AppleIIC for the last few months, I sincerely appreciate the speed and convenience of the single keystroke feature.

[ED. NOTE: having had a little time to work with a QL I can honestly say that it will take a while to get used to the keyboard. It is somewhere between a 2068 and a typewriter in layout and feel.]

GRAPHICS

While graphic characters have been eliminated, a wide range of graphics commands are included. Some of them are:

PAPER
INK
PIXEL
LINE
ARC
CIRCLE
ELIPSE
FILL
SCROLL
PAN
WINDOW
PENDOWN
MOVE
TURN
TURNTO

As you might have guessed, PENDOWN, MOVE, TURN, and TURNTO involve a pseudo-turtle function.

MATH

All the standard math functions are included, as well as an impressive floating point range of -10 E 615 to 10 E 615 with eight significant figures. That should make a lot of you jump for joy!

continued on -page 6-

continued from -page 5-

BUNDLED SOFTWARE?

Although the programs included with the QL package offer wordprocessing, spreadsheet, graphics and database, they are offered as separate microdrive cartridges and their size is such that only one at a time can reside in memory. Thus, the exchange of data between programs is not easy and cannot be instantaneous.

The software titles and function performed are:

QUILL----WORDPROCESSING
ABACUS---SPREADSHEET
ARCHIVE--DATA BASE
EASEL----BUSINESS GRAPHICS

Passing data from Abacus to the other three packages is relatively easy. On the other hand, passage of data from Archive to Quill is not so straightforward.

At the present time, the Psion packages are being slimmed down further so that they can be crammed on to a 128K ram. This will improve performance and free more user ram. I hope this is the version we see in the states!

While the manuals are comprehensive, errors between the FB and AH versions of the QL have been corrected only to be replaced by others.

Window capabilities are available, but multi-tasking must be accomplished with machine code routines. Let's all hope such instructions are clearly defined.

"Despite all the delays and problems, Sinclair is confident that the QL is going to be a winner on the scale of its previous machines. Sales targets are 250,000" (for 1984) "and 750,000 for the next year. New manufacturers are due to be announced soon, and the American launch is planned for the Autumn."..Practical Computing, Sept. 1984.

As you can see, the American launch date has already been missed. [ED. NOTE: so were the sales figures]

Following are the conclusions of the writers and reviewers of Practical Computing....

* This one will run and run. When the bumps have been ironed out the QL will represent unbeatable value.

* The microdrives are overpriced underperformers, it will not be long before third-party suppliers offer disc drives that really be a leap for the machine.

* The Psion programs are eminently usable for most home applications. Only Quill lets the side down with its rather sedate response.

* Superbasic seems to be a little wobbly at present. The potential is there, especially with the structuring and wide range of commands. It is also slow, which could be a problem for basic games. The lack of multi-tasking at this level is also disappointing.

* Initially there will be a shortage of software, but the indications are that software writers are beavering away to cater for what will be a huge market.

* It is only too easy to knock aspects of the QL, but the fact remains that for about 400 pounds you are getting a micro with potential, and four usable application programs here and now. Despite claims to the contrary, it is no low-end business machine but an up-market home micro.

As always, computer purchasers must again take the bad with the good.

If you use a QL or would like additional information, I would suggest that you write to:

QLangers
Practical Computing
Room L307
Quadrant House
The Quadrant
Sutton
Surrey SM2 5A2
Great Britain

This is a group who are monitoring the state of the QL and would appreaciate learning of any bugs or bumps in the software. Also, we at SYNAPSE would appreciate your comments.

GRADER FOR THE TS2068
AND THE TS1000
WRITTEN BY ROBERT C FISCHER

In the April/May 1985 issue of SYNAPSE we did a review of GRADER by Robert C. Fischer. As often occurs there can be differences of opinion between reviewer and author. Mr. Fischer felt that we were a little critical of his program and sent us a letter (a very nice letter) explaining his feelings and view. Somehow this letter got set aside and not published, for this we apologize to Mr. Fischer. Following is his letter: better late then never.

Dear Sir:

Thank you for doing a review of my program, T/S GRADER. The review was pretty critical, but that's okay too. However, my copy and that of a customer I checked with do not have the errors mentioned in the review. I wonder if some flaw occurred when I made your copy? I can not crash the program as described and I can not cause a problem with the N)EXT routines in any way I've tried. N)EXT will return you to the main prompt when there is no next class or next grade or when the next grade slot contains no scores. This is supposed to happen. More information would be appreciated or perhaps you could return that copy so I could check it personally.

There is also an improved version. Now you can easily reenter a deleted grade and you can add or subtract a selected number of points to any grade for any selected class automatically. Other convenience features have also been added. Some items mentioned in the review will probably be changed soon ("T" for tone will be changed to "C" for click but I may not change "A" for analysis).

I do disagree with the reviewer in a couple areas. The 46 student/class limit should not cause any real difficulty for teachers of large classes. My classes can exceed 100 students and I have no problems. If you aren't satisfied and you already purchased the program, I offer a moneyback guarantee. I also think primary school teachers could make good use of it. It would be nice to have all the averages for a student from various classes on one screen, but this lack is hardly a crippling weakness (at least my present customers don't seem to think so - I just called some a second time to be sure). I have yet to receive a complaint and I previously called every one of my U.S. customers who have listed numbers to be sure! Combined with no copy protection and a moneyback guarantee no one is going to beat my customer support! All purchasers of the original version also received the first major update free!

Another point, the fact that an average of 100 or more will be printed as 100DOE JOHN is not a bug. I think it's more important to avoid cutting the maximum length of the name. Many may disagree but there is still that guarantee. I won't have dissatisfied customers.

Finally, the restart process which occurs when the user makes a mistake in the total number of students is the result of my efforts to make the program as flexible as possible. It would have been simpler to take the approach of many other programs and not give the user any freedom in this area, but I chose flexibility instead. While I continue to study ways to minimimze the problem, I stand by my decision.

I regret the apparent bad copy you received and if you would like I'll replace it with my new version.

Sincerely,
Robert C. Fischer
221 Scoggins St.
Summerville, Ga 30747

June 6, 1985

PS. THERE IS ALSO A SIMILAR VERSION FOR THE TS1000

ZXLR8 PART 1

ZXLR8 DIFFICULTIES?

BILL RUSSELL

If you have trouble making ZXLR8 "work", please consider these:

1) a bad or improper tape machine
2) dirty or worn or magnetized tape head
3) poor quality tape
4) electrical interference
5) improper loading volume setting
6) computer "noise"
7) improper cable hookup

If you haven't done it already, try another tape machine. Don't expect good results from older model PANASONICS. Brad Bennett recommended the GE 3 5086A model. In general, the "cheaper" machines seem to work better than the more expensive kinds.

Be sure your tape head is very clean and demagnetized. RADIO SHACK sells the things you need for this. ZXLR8 won't work well unless the head is regularly cleaned and demagnetized.

Problems from less than superior tape cassettes are common. A very good tape to use with ZXLR8 is TDK's top quality type. Go to K-MART or other discount store and buy a cassette of the highest quality TDK tape. Then when you use ZXLR8, you can be reasonably sure that there will be no problems with the tape. We have found that about half of the brands of certified computer tapes (such as RADIO SHACK'S) will not work with ZXLR8.

Most light dimmers in a home or other building will prevent ZXLR8 from working properly. Some fluorescent lights in the vicinity may cause problems, too. Make sure these electrical devices are "off" when you try ZXLR8. If you live in the country, be wary of interference from electrical cattle fences.

Some TS1000 or ZX81 computers will generate electrical noise that makes problems for ZXLR8. Try another computer unit, power supply, or RAM pac. Sometimes the capacitor in the EAR input circuit causes problems until it is replaced.

Remember that the loading volume setting is quite critical and that the proper volume setting varies with the tape machine in use. Some tape machines will require a high volume setting and others, quite low. Experiment to find the right setting.

Use only one cable at a time. If both MIC and EAR cables are plugged into your computer and tape machine at the same time, "ground loop noise" will be generated and may make ZXLR8 unusable.

ZXLR8 WILL NOT WORK WITH TS1500 COMPUTERS. However, you can replace the TS1500 ROM with your TS1000 ROM and ZXLR8 will work.

[ED. NOTE: these suggestions are good practice for all load/save operations involving tape]

ZXLR8 PART II

ZXLR8 AS A WORD PROCESSOR

C. VERNON TIDWELL

1) Load ZXLR8 into computer.

2) Input calibration figures when requested.

3) Store ZXLR8 as requested in suitable memory location (I use location 10000).

4) Now call the word processor into action by typing and entering: RAND USR 10003. (notice that this address is the location address plus 3).

5) You may now type happily away, use the space bar as needed, but sorry to say no graphic characters or key-words are permitted. You may type as many as 22 lines - which will fill the screen. Hide the cursor in the line 23 and hit the "ENTER" key. Then press the "COPY" key for a print-out of your TV-screen letter.

6) To continue your letter if desired, you need to call the word processor again with RAND USR 10003 and so on until you finish your letter.

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%                                  %
%       ZXLR8   PART   III         %
%       TS1500   &   INBYTE        %
%         GREGORY C HARDER         %
%                                  %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

Dear Mr. Russell;

This letter is in regard to your program "ZXLR8". I own a TS 1500 with a Hunter Board and TS 1016 Rampack. The reason I'm writing is that I've seen your advertisements for ZXLR8 which mention, "NOT FOR TS1500", however, I have used ZXLR8 entensively within the transparent memory region and it works fine. It does not seem to work in upper RAM, I.E., past 32K. I was curious as to why this is, I note that the TS 1500 ROM will on initiation:

```
3DAh  LD HL, 2000h
3DDh  DEC(HL)
```

This would appear to have the affect of corrupting stored code at various addresses. At least it does on the Hunter Board if the write position. Anyway, this may help you sell a few more copies of the program.

Also, I've modified the program to suit my needs, I felt it used too much of my N.V.M. One change which I like is shown below, which will flash the screen during load so that you have an indication that the program is running. It can be added to the routine I call "INBYTE" quite easily if anyone is interested.

```
  ADDRESS         INSTUCTIONS
DCML   HEX     HEX      MNEMONICS
9294   244E    D9       EXX
9295   244F    CD460F   CALL BREAK-1
9298   2452    30F3     JR NC,BREAK
9300   2454    0600     LD B,00
9302   2456    16FF     LD D,FF
9304   2458    15       DEC D
9305   2459    DBFE     IN A, (FE)
9307   245B    D3FF     OUT (FF),A
9309   245D    A7       AND A
9310   245E    F25824   JP P,2458
9313   2461    7B       LD A,E
9314   2462    BA       CP D
9315   2463    DA5624   JP C,2456
9318   2466    7A       LD A,D
9319   2467    91       SUB A,C
9320   2468    78       LD A,B
9321   2469    17       RLA
9322   246A    47       LD B,A
9323   246B    30E9     JR NC,2456
```

There is no net loss or gain in length.

```
ZXLR8ZXLR8ZXLR8ZXLR8ZXLR8ZXLR8ZXLR8
X                                 Z
L       ZXLR8    PART   IV        X
R  MODIFICATIONS AND CORRECTIONS  L
8          JIM    ZSIGO           R
Z                                 8
XRL8ZXLR8ZXLR8ZXLR8ZXLR8ZXLR8ZXLR8Z
```

Dear Mr. Russell,

Here is the information on the ZXLR8 that I spoke to you about. [ED. NOTE: the conversation was about the instructions to cause ZXLR8 to return in slow mode instead of fast mode. The instructions provided with ZXLR8 are incorrect.]

1) Make the following changes to ZXLR Modification page: to instruction #4. RUN the program. A blank screen with the inverted L cursor in the lower left corner should be apparent. At this time ENTER the following 15 bytes of decimal data. Be sure to press the ENTER key after each entry.

DATA LISTED		CHANGED DATA
245		245
213		213
197		197
42		42
59		59
64		64
229		229
205		205
0	change to:	245
56	change to:	64
225		225
62		62
64		64
165		165
40		40

to instruction #6. Check your work with the following: PRINT,,,,RAND USR 18520. The displayed value should be 240. [change 240 to 8] If it is not. repeat steps 4 and 5.

to instruction #7. EDIT line 9001. The line should read: IF USR 18520 = 240 THEN GOTO 9004 [change 240 to 8]

2) The second set of modifications is to the IL (Index Load) portion of the ZXLR8 program. [ED. NOTE: it is not clear as to whether you can use both set of changes to ZXLR8 at the same time. I suggest you try some programming changes such as: 9001 IF USR 18520 = 60 OR IF USR 18520 = 8 THEN GO TO 9004.] Make these changes to the code: POKE 17280,64 POKE 17286,64 POKE 17397,64. Changes to the basic: 9001 IF USR 18520=60 THEN GOTO 9004

TELECOMPUTING

JOHN BURNS and DAVID C RIDGE
NEWSLETTER EXCHANGE
ATLANTA T/S USER GROUP
NOV 85, DEC 85, JAN 86

The Central Pennsylvania T/S Computer Users Group and SYNAPSE take part in a regular newsletter exchange with other groups across the nation and in Canada. In order to share as much information as possible between all of these groups and the various members thereof, 15 of those groups have a reprint policy which permits free exchange of articles and programs between newsletters providing full credit is given to the author(s), group and newsletter. SYNAPSE and ATLANTA are part of that free exchange. The following article comes from the Atlanta group and John Burns and David C. Ridge. My thanks go out to them for their continued support of the Timex/Sinclair computers.

TELECOMPUTING

I finished off the last morsel of my dessert and looked at my watch. It was only 8:00 o'clock but the storm clouds outside seemed too intimidating to drive to Etobicoke and give David a copy of the newest program I had written. If only I could simply call David up and send my program via the telephone. Now that would be something special.

Well friends as you have read my thoughts, that is precisely what I did! The magic of electronic mail and telecomputing has come into mine and many thousands of other computerists' home. With the addition of a modem weighing in at less than a pound I have plugged into a world of information and resources so vast and accessible that one's head whirls with the knowledge that sci-fi is here at my fingertips. With the ease of picking up the phone I can call my friend David and send him a full computer program with all the trimmings. The program can have just a BASIC listing, or be written completely in Assembly or it may not be a program at all. This very article which you are now reading has been wired between our computers via Ma Bell's express for additions and editing on our respective TASWORD II wordprocessors.

Let us not stop there. If that was all it did then I'd admit that it was not as revolutionary as it is. NOW how about this. I have a question about how to set up my printer for use with my computer. My Toronto associates are not aware of the answer. I think how nice it would be to send my problem out into the world where someone might know the solution. Again the solution is just a call away. I connect with CompuServe (a continent wide network where all computerists can commucicate) direct myself to the TIMEX Sinclair bulletin board and simply type my inquiry onto the message board. It is here that the nucleus of who's who on computers across North America communicate. While on the board I read up on what is new (like minutes old) in the Timex world and then go to the main menu. From there I read up on the unedited Associated Press, get stock quotations from the Harvard Business Review and see if American Express has any cheap gifts for my wifes' birthday. And yes I want a plane reservation to New York in August so I log into TWA reservation terminal and get exposed to every airline flight in North America and beyond. Well my little problem with the printer can wait till tomorrow when I call up and read the half dozen answers from friends in California, Ohio, Minnesota and elsewhere.

I communicate with people all over North America, send them mail or programs. I get information I want without the watering down for the masses. At any time I am able to use my computer as a terminal for communicating. The question that I find myself now asking is not; "What can I do with a modem." but rather, "How could I survive without it. What can I do next?".

Well, not that John has got you all worked up about the fascinating world of telecommunications (phew! did I spell it right!?), I think this is an appropriate time to arm you with the knowledge you will need to make an intelligent and speedy

continued on -page 11-

continued from -page 10-

acquisition of you modem. I should mention at this time that in this article we will be refering to the 2068 only due to the authors' lack of exposure to ZX81/TS1000 modems.

WHAT YOU NEED

There are actually two different modems available for the 2068: the TS2050 by Westridge Communications and a unit offered by Byte Back. The TS2050 is univerrsally considered the best choice for many reasons. The TS2050 is the modem that TIMEX was offering and therefore is most compatible with the 2068. It matches the 2068 asthetically and has superior software available for it. So, there are only two different items you must purchase to do some serious telecomputing (assuming you already own a 2068). These are a Westridge 2050 modem and the MTERM II Smart software. I should explain that the modem can be used quite effectively with the software that it comes with (MTERM I). However using MTERM I your computer becomes a "dumb terminal". This means that you can communicate with any board or computer with your modem but you cannot upload (transmit information) or download (save received information). A TS2050 modem without MTERM II Smart software is like owning a fine automobile with no license plates ... limited in its' use! MTERM II also provides a vast array of features and capabilities. One other item I strongly recommend be purchased with MTERM II is the SMART TERMINAL TELECOMMUNICATIONS manual by Barry Carter. The manual that is provided with MTERM II is not just bad, it is CRIMINALLY AWFUL! The Barry Carter manual is a little sketchy for hard core technical types but a must for the beginner.

WHERE TO GET IT

The TS2050 and MTERM II can be purchased at most of the usual TIMEX aftermarket suppliers, however at the time of E. A. Brown co. was offering a nice package deal. [ED. NOTE: that may not be so at the time of this publication] You can expect to pay about $120 US for the modem and MTERM II is about $24.95 US. Last time I checked, Barry was asking $5.00 US for his manual.

E. Arthur Brown Co.
3404 Pawnee Dr.
Alexandria, MN 56308
1-612-762-8847

Barry Carter
PO Box 614
Warren, Michigan 48090

Now I will get down to detail about how you actually do it!

One of the most exciting and popular uses of your modem is to communicate with CompuServe. CompuServe is a huge database where you can interact with other computer enthusiasts on topics of every imaginable kind! CompuServe is well on the way to creating a concept of North America as the "electronic village". It is indeed the central nervous system of the computer cult in North America.

A detailed description of everything that CompuServe offers would more than fill the entire newsletter. Everything from movie reviews to computer clubs. Almost anything that can be put into print is on CompuServe. Perhaps I can give you an idea of the possibilities by sharing with you my personal experiences and favourite uses of the system. There is a Timex/Sinclair club or SIG (special interest group) on CompuServe and as a dedicated Timex/Sinclair fanatic I quite naturally spend a great deal of time there.

This SIG, and indeed all SIGs are open to any person on CompuServe. I should point out that you do not need a Commodore computer to visit the Commodore SIG or an Apple to visit the Apple SIG. Your 2050 modem will allow you to communicate in a standard format used by most BBS's and computers as long as they use the 300 baud rate of communication. Most SIGs consist of two main features. The message base and the data library. The message base is simply a public bulletin board where all of the Timex users on the system interact and communicate with each other. This is very useful because we all share our knowledge. If someone in Alaska has been burned by an

continued on -page 12-

continued from -page 11-

unscrupulous retailer then we all know about it! If there is a fantastic new product out that some one in New Jersey has just received, then we all know about! If you have a question that nobody in your circle of friends is able to solve simply put up a message asking for some help and call the system back in a day or two. There will probably be five or six answers and suggestions waiting for you! If you would rather communicate privately with another user then you can use the CompuServe electronic mail system called EASYPLEX. Everyone is very friendly and willing to help. I feel that I have made many new friends on CompuServe by communicating with them several times in this manner and the amazing thing is that I have never met them!! I have no idea where they live or what they look like but we communicate regularly! How do get to the Timex/Sinclair SIG? You simply type GO CLUB at any (!) prompt and you will be taken to the land of the orphaned computers.

There are many other features that I find useful on CompuServe. There is the Associated Press news SIG which gives the REAL news as the newspapers receive it! Not just the watered down version which you and I receive in the paper! This is updated every hour. There is a SIG for many popular Professions such as Doctors, Lawyers, Engineers, etc. I am a dog lover so I spend some time on the veterniary SIG. On this SIG, veterinarians discuss the latest developments in their noble profession. Now don't get the idea that CompuServe is all recreation. I have recently put the system to a very novel business use. I am in the business of motorcycle service management. I was putting together a study on how to improve the service department. Part of this study involved a survey of customers to ask what their likes and dislikes are concerning the service departments that they have dealt with. I thought to myself "wouldn't it be great if I could carry out the survey on CompuServe!?"

So I logged on to the system and called up the subscriber directory. The subscriber directory is a list of voluntarily posted information about yourself, your interests and your computers. By posting such information about yourself, other people with similar interests can easily find and communicate with you. I put in a search string of "MOTORCYCLE" and to my surprise, received a listing of over two hundred users who had posted motorcycles as one of their interests. I then selected 50 names at random and sent them each a small EMAIL message stating that I would be interested in their ideas and suggestions for the way a service department should run. The response was good and I successfully carried out the survey from the comfort and privacy of my home!

The data library in each SIG is a collection of public domain software and articles which you are invited to down load (receive) for free! You can get some excellent programs and reveiws over the phone line. You are also invited to contribute (upload) anything you would like to the data library.

So by now you must be muttering to yourself "OK, OK how do I join CompuServe and how much does it cost"! To join CompuServe all you have to do is walk into your favourite computer store and ask for a CompuServe starter kit. This kit consists of a binder of information about the system, 5 free connect hour, a subscription to ON LINE TODAY magazine, your permanant ID number and a temporary password (you will receive your permanant password when you log on and register). The subscription to the magazine is free for as long as you are an active user. The going price in Toronto for the kit is $59.95. This is the only fee you ever pay to join CompuServe. After your 5 free hours run out, you will be billed for connect time only. At the time fo this writing I believe the charges for connect time are $5.25 US [ED. NOTE: per hour?] Even though CompuServe is based in Ohio, it is not a long distance number. Every metropolitan center has a local network access number and the charges for using this link are 25 cents per hour which is added to your monthly CompuServe bill. The most convenient method of billing is through a credit card. You simply give the card number to

continued on -page 13-

continued from -page 12-

CompuServe and they will bill you monthly. Other billing methods can be arranged however.

Ok, you've all been crying "where's the beef!" so in this section we will learn a little modem magic. Nothing up my sleeve ... here we go!

Certainly the most misunderstood and poorly documented aspect of using the Westridge 2050 modem is the area of sending and receiving programs, especially machine code. Before I get into that area however I think I should first clear up the confusion surrounding the parameter settings for your modem. I will not give an in-depth exploration of what Duplex, word size and Parity mean as that would require much more space than we have here and besides even I'm not totally sure of some of the details! Instead I will simply give you the settings that you will need for the vast majority of your telecommunicating.

I have found that the almost universal setting for communicating with any BBS are as follows: DUPLEX-full, CR-off, LF-off, CON-none, STOP-1, WORD-7, PARITY-even. Experience has shown that these settings may not be the best for other modems (although I don't see why not) but will work fine for the 2050. The only time these settings need to be changed is when you are communicating directly with another micro such as another 2068 user or when you are sending or receiving a program, or when the BBS that you are connected to recommends different settings. Bear in mind, however, that I have found that even when they do recommend different settings, the ones described above work just fine. When you are connected to another micro, your PARITY must be set to odd and the DUPLEX to half.

While we are on the subject of micro to micro modeming, I should mention the easiest way of accomplishing the connection. The simplist way that I have found is to first communicate with the other person by voice. Then both of you should enter MODEM CMD M (caps shift + enter while in the terminal mode) at the same time. Do not hang up the phone at this point. When the screen tells you that you are connected, you may both hang up the phone. At this point, anything that either of you type will appear on both screens! Now if you are sending a BASIC program, you must go to the data buffer menu and empty the buffer then change to CON:HEX. Next get back to the main menu and exit to BASIC. Load the program just as you normally would. When loaded, call up MTERM with PRINT USR 54016 and connect with your party as described above. Make sure that the person you are sending to has their CON:HEX and the buffer empty. The receiving party does not have to open the buffer manually.

I will show you how the sending party can do this. Once you are both communicating on screen, the receiving party can sit back and leave the driving to the sender. The sender will now open the buffer of the receiver by sending a control "R". As described in the MTERM manual, a control character is invoked by first pressing caps shift 7 and then the desired letter. After opening the receiving buffer, go to your data buffer menu and press T for transmit. Hit enter three times to get back to terminal mode and lines of hex should start scrolling across the screen. When the scrolling stops, the transmission is complete. You must now close the receiving buffer by sending a control "T" That's it!!

The person at the receiving end should have the same number of bytes as you in the buffer. They can now simply exit to BASIC and there should be a program there, ready to run or save! Note that directly after the receive buffer is closed you can type to them to indicate that you are finished the upload and to check the results.

Sending and receiving machine code is by no means complex but it is a little trickier that BASIC so listen up. The settings should be the same as sending a BASIC program however, you must expand the sending buffer to the same number of bytes that you are sending. The method for doing this is as follows. First find the number of bytes you are going to send and plug it into the formula below.

continued on -page 14-

continued from -page 13-

This formula will give you the pokes you need to expand the buffer. LB = A - 256 * INT (A / 256); HB = INT (A / 256); where A is the number of bytes you wish to send + 26710. Now that you have the correct pokes you must follow this procedure exactly. Load MTERM II and clear the buffer, then exit to BASIC. Next make the following pokes: POKE 23627, LB : POKE 23628 , HB. Call up MTERM II and exit to BASIC again. Now do the pokes again. I don't understand why these pokes have to be done twice but you do not get an accurated buffer expansion unless you do.

Now you can load in the machine code but you must load it in at location 26710 by using the following command: LOAD "FILENAME" CODE 26710. After the coded has loaded you can call up MTERM II and connect with the receiving party. Again, the receiving party must have the buffer empty. The sending procedure is the same as BASIC. Now the person at the receiving end has to fool around a little. First they must write down the number of bytes in the buffer then exit to BASIC. Next they must save the bytes with this command: SAVE "FILENAME" CODE 26710, bytes in buffer. Then they have to know the correct location for the code to run at. The code is loaded back in to the correct location with: LOAD "FILENAME" CODE (location). The code can be resaved now from it's correct location. You can send TASWORD files with the same method as sending code but your CON should be NONE and you may have to hit ENTER after every line goes by on the screen as it is being transmitted because TASWORD does not embed a line feed or carriage return at the end of each line. I will be covering TASWORD file transmission at a later date. There is an alternative to this way of sending and TASWORD files. There is now a fantastic utility called LOADER IV by Kurt Casby. This utility makes sending m/c and TASWORD files a snap, and provides an extra 20 auto-dial numbers and auto redial when busy! I highly recommend it. Just send $7.95 US to: Kurt Casby, 25 Battle Creek Court, St. Paul, MN 55119. I can be reached on CompuServe anytime. My ID# is 70416, 1435. As we say on the boards ... read you later!

T/S CONNECTION

JACK ROBERTS

FROM: JACK ROBERTS
THE T/S CONNECTION
3832 WATTERSON AVE.
CINCINNATI, OHIO 45227

TO: T/S NEWSLETTER EDITORS

SUBJECT: T/S REPAIRS

DEAR EDITOR;

I want to personally thank-you for your continued efforts in supplying information to the loyal group of T/S Users that abound throughout our land. The past 18 months (since Feb. '84) have been harrowing for many of us as we have seen hundreds of former users relegate their fine machines to the dark corner of a closet. Only through the efforts of a diehard group, such as yours, has the interest and further developements of software and hardware for T/S Users been accomplished.

The T/S Users Group of Greater Cincinnati was one of many groups that was ready to toss in the sponge after the announcement was made in Feb. '84. A few of us recognized the need for continuing support of the dedicated users, and the T/S Connection was conceived as the Supply and Support Section of the TSUGGC. Our goal in the beginning was to locate software and hardware for the area users, as the major suppliers and distributors began to discontinue their line of T/S products. One of our members, an electronics technician, was approached with the idea of doing minor repairs of hardware as it became necessary. Within a few months time, the word of our efforts spread and more and more requests were made for service and repairs. At about the same time a few suppliers; i.e. E. Arthur Brown Co., Games to Learn By, Haltronics, Sunset Electronics, Zebra Systems, et.al. began to reenter the hardware and software market in a serious manner.

continued on -page 15-

continued from -page 14-

As our requests for repairs continued to grow, our technician took a part time job in order to devote more time to the repair of T/S Hardware. This finally evolved into a decision to create a full time Service and Repair affiliate which is now Carver Technologies, division of the T/S Connection. Our goal was, has been, and will continue to be, "to keep em running at the lowest possible cost, with fast and efficient service". Our knowledge of the T/S equipment has come through long hours of study, research, and "cut and try" methods, with input supplied by dozens of users. We do not have an unending supply of spare parts and our search for components stretches throughout North America and into Europe.

Many overzealous editors of newsletters, in their desire to feed information to their hungry readers, have erroniously reported a number of things that are not exactly true. It is our sincere wish that this letter will clear the air and state the facts as completely and as absolutely as possible.

FACT: The T/S Connection IS NOT and has NEVER been an authorized Service Facility of the Timex Corporation.

FACT: The Timex Products Service Department in Little Rock, Ark. continues to do In and Out warranty service on T/S Computer Products.

FACT: Users have the option of where to send and Out of warranty unit for service.

The T/S Connection and Carver Technologies have developed several enhancements for T/S Products, i.e.: Power Supply Switch for the 2040, Stereo Jack for the 2068, LED for the 2068, et.al., and will continue in our efforts to meet the requests and demands of users. The Greater Cincinnati Users Group has developed a 2068 based BBS which is now operational and which is being improved daily. This BBS will be fully operational on a nation wide basis in a few weeks with the addition of an AERCO Disk Drive System.

continued on -page 23-

SOFTBALL STATS

ZX81, TS1000, TS1500

JOHN KENNAN

Recently, [ED. NOTE: this was sent to me this summer, but just thinking about softball kind of makes you feel a little warmer doesn't?] I began to play on a local softball team. After one of the games, one of the guys suggested putting the team stats on a computer so everyone could get an up-to-date record of team performance. Naturally they had an expensive I.B.M. in mind for the task. Not to be outdone, I wrote STATS to accomplish this task on my ZX81.

Stats is a menu driven program that will keep track of names, at bats, hits, walks, r.b.i.'s, batting average, and on base %. In addition, a sort routine is included to place the statistics in order according to name or any of the statistics. The statistics can be up-dated at any time.

Stats is relatively straight-forward program, however it does make use of a programming technique that would be of use to any programmer. It has to do with the use of string arrays to store data. In particular note line 8060 in the inialization routine:

```
8060 DIM A$(20,41)
```

This line sets up an array where we will be able to store a roster of 20 names and all the associated stats (actually, if you plan to store more than 19 names you should increase the size of this array, perrhaps to a$(40,41). This array consists of 20 strings of 41 characters. In each string, the first 21 characters will contain the players name, whereas the remaining characters will contain the statistics., for example, characters 22 and 23 contain the number of at bats. For player 1, the number of at bats would be retrieved from array A$ as follows:

at bats = 256 * CODE A$ (1,22) + CODE A$ (1,23)

This method of storing a number takes only 2 bytes and works well as long as the number is an

continued on -page 16-

continued from -page 15-

integer < 65536 (more characters could be used to accomodate larger numbers). In the case of the batting average or the on base %, the number was multiplied by 1000 prior to storing in the in the array. The means of storing the data in the array A$ is in lines 8950 - 8990. There, the data is transferred from the numberical array A(10) to the string array A$(20,41).

Aside from memory savings, the technique really simplifies sorting the data. In STATS, there is a subroutine at line 9500 that uses a shell sort (see "An Assortment of Sorts by William Tracy - SYNC March/April 1984). When any two strings are exchanged, both the names and the statistics are exchanged at the same time. Thus the one subroutine, if set up properly, can quickly sort the same array in a variety of ways just by changing the portion of the string that it looks at. This makes for a very fast and efficient sort.

Even if you don't have a team, I hope that STATS will at least suggest some good programming ideas, STATS can easily be expanded to recorded other things such as home runs. In fact some of the arrays were made extra large to accomodate additions. As always, additions, corrections, suggestions or questions are welcome.

John Kennan

NOTES ON THIS PROGRAM LISTING: NON-STANDARD PRINTER CHARACTERS ARE REPRESENTED IN THE FOLLOWING FASHION: an inverse L followed by an inverse M will be: [I:LM]. [I:AT BAT][IG:1][I:S :] Represents AT BAT'S in inverse. The [IG:1] represents the inverse graphic on key 1 which is being used as an apostrophe

```
   1 REM SOFTBALL STATS:JOHN KEN
NAN 6/10/1985
   2 REM TO RESTART PROGRAM: GOT
O 60
  10 PRINT "DO YOU WANT TO REINI
TIALIZE THE";TAB 0;"PROGRAM (Y O
R N)"
  20 INPUT P$
  30 IF P$(1)="Y" THEN GOSUB 800
0
  50 PRINT "PROGRAM LAST USED ON
: ";D$
  60 PRINT "ENTER TODAY [G:1]S D
ATE: ";
  70 INPUT D$
  80 CLS
  90 PRINT D$
 100 PRINT "[I:MENU]"
 110 PRINT "1-ADD TO ROSTER"
 120 PRINT "2-DELETE FROM ROSTER
"
 130 PRINT "3-UPDATE STATS"
 140 PRINT "4-PRINT STATS"
 150 PRINT "5-PRINT ROSTER"
 160 PRINT "6-SAVE PROGRAM"
 190 PRINT AT 10,0;"CHOOSE (1 TO
 6)"
 200 INPUT Q
 210 IF Q<1 OR Q>6 THEN GOTO 90
 211 CLS
 215 IF Q=6 THEN GOTO 6000
 220 GOSUB 1000*INT Q
 230 GOTO 80
1000 REM [I:ADD TO ROSTER]
1005 CLS
1010 PRINT "ENTER PLAYER NAME (L
AST,FIRST)";TAB 0;"ENTER ""END""
 TO STOP:"
1020 INPUT E$
1030 IF E$="END" THEN RETURN
1040 LET C=C+1
1050 LET A$(C,1 TO 21)=E$
1055 PRINT E$
1060 PRINT "DO YOU WANT TO ENTER
 ANY STATS";TAB 0;"(Y OR N)"
1070 INPUT P$
1080 IF P$(1)<>"Y" THEN GOTO 101
0
1090 LET K=C
1100 GOSUB 8500
1110 GOTO 1010
2000 REM [I:DELETE]
2010 IF C=0 THEN RETURN
2020 GOSUB 5000
2030 PRINT AT 21,0;"WHICH FILE?(
1 TO ";C;"):"
2040 INPUT Q
2050 FOR N=Q TO C-1
2060 LET A$(N)=A$(N+1)
2070 NEXT N
2080 LET A$(C)=""
2090 LET C=C-1
2100 RETURN
3000 REM [I:UPDATE]
3005 CLS
3010 FOR M=1 TO C
3020 PRINT A$(M)(1 TO 21)
3030 PRINT "DO YOU WANT TO ENTER
 ANY STATS";TAB 0;"(Y OR N):"
3040 INPUT P$
3050 IF P$<>"Y" THEN GOTO 3080
3060 LET K=M
3070 GOSUB 8500
3080 NEXT M
3090 RETURN
4000 REM [I:PRINT STATS]
4005 CLS
4007 GOSUB 9000
```

continued on -page 17-

continued from -page 16-

```
4010 FOR K=C TO 1 STEP -1
4020 GOSUB 8800
4030 PRINT A$(K,1 TO 21)
4035 LPRINT A$(K,1 TO 21)
4040 FOR N=1 TO 4
4050 PRINT TAB 2;Q$(N);A(N)
4055 LPRINT TAB 2;Q$(N);A(N)
4060 NEXT N
4070 FOR N=5 TO 6
4090 LET X$=STR$ (A(N)/1000)
4100 PRINT TAB 2;Q$(N);X$(1 TO L
EN X$)+(".000")(LEN X$ TO 4)
4105 LPRINT TAB 2;Q$(N);X$(1 TO
LEN X$)+(".000")(LEN X$ TO 4)
4110 NEXT N
4115 IF PEEK 16442>=10 THEN GOTO
 4120
4116 GOSUB 5900
4117 CLS
4120 NEXT K
4130 GOSUB 5900
4140 GOTO 80
5000 REM [I:PRINT ROSTER]
5005 CLS
5010 FOR N=1 TO C
5020 PRINT N;TAB 2;A$(N, TO 21)
5030 NEXT N
5040 GOSUB 5900
5050 RETURN
5900 SLOW
5910 PRINT AT 21,0;"TO CONT HIT
A KEY"
5920 PRINT AT 21,0;"[I:TO CONT H
IT A KEY]"
5930 IF INKEY$<>"" THEN GOTO 5950
5940 GOTO 5910
5950 FAST
5970 RETURN
6000 REM [I:SAVE]
6010 CLS
6020 PRINT "PREPARE TAPE RECORDER"
6030 GOSUB 5900
6035 CLS
6040 SAVE "STAT[I:S]"
6050 GOTO 50
8000 REM [I:INITIALIZATION]
8010 PRINT "IF YOU CONTINUE YOU
WILL ERASE";TAB 0;"ANY PREVIOUSL
Y STORED DATA";"DO YOU WANT TO C
ONTINUE (Y OR N)"
8020 INPUT P$
8030 IF P$(1)<>"Y" THEN RETURN
8060 DIM A$(20,41)
8080 LET C=0
8090 PRINT "ENTER TODAY[G:1]S DA
TE:"
8100 INPUT D$
8110 DIM Q$(10,12)
8120 LET Q$(1)="[I:AT BAT][IG:1]
[I:S    :]"
8130 LET Q$(2)="[I:HITS       :]"
8140 LET Q$(3)="[I:WALKS      :]"
8150 LET Q$(4)="[I:R.B.I.][IG:1]
[I:    :]"
8160 LET Q$(5)="[I:B.A.       :]"
8170 LET Q$(6)="[I:ON BASE ][IG:1]
[I:/][IG:4][I::]"
8180 DIM A(10)
8200 RETURN
8500 REM [I:STATS]
8510 GOSUB 8800
8520 FOR N=1 TO 4
8530 PRINT Q$(N);
8540 INPUT Z
8550 LET A(N)=A(N)+Z
8560 PRINT Z
8580 NEXT N
8590 GOSUB 8900
8600 RETURN
8800 REM [I:CALC STATS]
8810 FOR N=1 TO 10
8820 LET A(N)=256*CODE A$(K,20+2
*N)+CODE A$(K,21+2*N)
8830 NEXT N
8840 RETURN
8900 REM [I:UPDATE STATS]
8910 IF A(1)=0 THEN RETURN
8920 LET A(5)=1000*A(2)/A(1)
8930 LET A(6)=1000*(A(2)+A(3))/(
A(1)+A(3))
8950 FOR N=1 TO 10
8960 LET A$(K,20+2*N)=CHR$ (INT
(A(N)/256))
8970 LET A$(K,21+2*N)=CHR$ (A(N)
-256*INT (A(N)/256))
8980 NEXT N
8990 RETURN
9000 REM [I:SORT]
9010 PRINT "DO YOU WANT TO SORT
THE STATS";TAB 0;"(Y OR N):"
9020 INPUT P$
9030 IF P$(1)<>"Y" THEN RETURN
9040 PRINT "SORT MENU"
9050 PRINT "[I:1-ALPHABETIZE:]"
;TAB 0;"[I:2-]";Q$(1);TAB 0;"[I:
3-]";Q$(2);TAB 0;"[I:4-]";Q$(3);
TAB 0;"[I:5-]";Q$(4);TAB 0;"[I:6
-]";Q$(5);TAB 0;"[I:7-]";Q$(6)
9060 INPUT Q
9070 LET R=(1 AND Q=1)+((18+2*Q)
 AND (Q>1))
9080 LET S=R+(20 AND (Q=1))+(1 A
ND (Q>1))
9090 GOSUB 9500
9095 CLS
9100 RETURN
9500 REM [I:SHELL SORT]
9510 LET SS=2**INT (LN C/LN 2)
9520 IF SS<C/2 THEN LET SS=SS*2
9530 LET SS=INT (SS/2)
9540 IF SS=0 THEN RETURN
9550 FOR T=1 TO C-SS
9560 LET Y=T
9570 LET W=Y+SS
9580 IF A$(Y,R TO S)<=A$(W,R TO
 S) THEN GOTO 9640
9590 LET P$=A$(Y)
9600 LET A$(Y)=A$(W)
9610 LET A$(W)=P$
9620 LET Y=Y-SS
9630 IF Y>0 THEN GOTO 9570
9640 NEXT T
9650 GOTO 9530
```

END OF PROGRAM

```
22222222222222222222222222222222222
2                                 2
2     B I N A R Y   D E M O       2
2        FOR ANY  COMPUTER        2
2         BY     D J KRILL        2
2                                 2
22222222222222222222222222222222222
```

Have you ever tried to explain the concept of "BINARY" conversion to someone and find that confusion was the result?

Next time, try this program by David Nowotnik (which first appeared in ZX COMPUTING - june / july 1985) and see if using your computer might make the task a bit simpler.

I added lines 565 and 605. You can include them or leave them out. Try it both ways and see which display suits you better. Either way the program will run properly. I also adjusted the delay loop at line 1000. David used 200 while I used 50. His value is fine for the 2068 but is too long a wait for a ZX81 or TS1000/1500. If you are going to use this program at a group meeting, youmight need a larger number to give you more time for explanation.

Mr. Nowotnik is well known for his ability and this program merits serious study. Look over lines 170 - 300 and 500 - 570. See if you can determine what is being done to achieve the result and properly display it to the screen.

EXAMPLE SCREEN:

```
-------------------------------------
  NUMBER= 239


         VVVVVVVV
  BINARY= 11101111

  BIT VALUE = 128

     1 X 128 = 128         239





          TOTAL= 239
   PRESS ANY KEY TO CONTINUE
-------------------------------------
```

```
 100 CLS
 110 PRINT AT 21,0;"ENTER A VALU
E (0-255)
 120 INPUT A
 130 IF A<0 OR A>255 THEN GOTO 120
 140 LET A=INT A
 150 LET B$=""
 160 LET Z=A
 170 IF Z=0 THEN GOTO 250
 180 LET X=Z/2
 190 IF X=INT X THEN LET B$="0"+B$
 200 IF X<>INT X THEN LET B$="1"+B$
 210 LET Z=INT X
 220 GOTO 170
 250 PRINT AT 4,2;"NUMBER= ";A
 260 LET B$="00000000"+B$
 270 LET L=LEN B$
 280 LET B$=B$(L-7 TO )
 300 PRINT AT 8,2;"BINARY= ";B$
 310 GOSUB 1000
 400 PRINT AT 21,0;"NOW CONVERT
 BINARY TO DECIMAL"
 410 LET S=0
 420 PRINT AT 20,12;"TOTAL= ";S
 500 FOR I=0 TO 7
 520 GOSUB 1000
 530 PRINT AT 7,17-I;"V"
 540 PRINT AT 10,2;"BIT VALUE=
";2**I
 550 GOSUB 1000
 560 LET T=VAL B$(8-I)*2**I
 565 PRINT AT 12,5;"[19 spaces]"
 570 PRINT AT 12,5;B$(8-I);" X "
;2**I;" = ";T
 580 LET S=S+T
 590 GOSUB 1000
 600 PRINT AT 12,28;S
 605 PRINT AT 20,12;"TOTAL= ";S
 610 GOSUB 1000
 620 NEXT I
 630 PRINT AT 21,0;"   PRESS ANY
 KEY TO CONTINUE    "
 640 IF INKEY$="" THEN GOTO 640
 650 RUN
 700 REM
1000 FOR J=1 TO 50
1010 NEXT J
1020 RETURN
```

===================================

MIDWEST TIMEX/SINCLAIR COMPUTERFEST

A Midwest Computerfest is being organized for May 3rd & 4th 1986. Vendors, hardware, software, swap-shop, classes, and more. See and learn about new products, programs, and ideas. The new editor of ZX Computing will also be there!

TIMEX/SINCLAIR IS ALIVE AND WELL!

Please indicate your interest in this affair by prompt response to:

T/S COMPUTERFEST
3832 WATTERSON AVE.
CINCINNATI, OH 45227

===================================

QLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQL
QL QL
QL QL MICRODRIVE FORMATTER QL
QL QL
QL BY BILL RUSSELL QL
QL QL
QLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQLQL

This short program for the QL lets you format two microdrive cartridges automatically, one cartridge in each of the two microdrives. Run the program and input the number of times that you wish each cartridge to be formatted. The program will proceed until the specified formatting is completed.

Because formatting removes the "stretch" from new microdrive cartridges and conditions the surface of the tape, you will be able to store more programming on a cartridge after formatting several times. Since a cartridge is stabilized by repeated formatting, your stored programming or data is less likely to be damaged with time and use.

Most experienced QL users recommend formatting a new cartridge 10 times. Just enter "10" at the program prompt and go away for awhile. To manually enter and wait out 20 formattings separately would require some time and effort

```
100 REMark FORMAT PROGRAM
107 INPUT "INPUT NUMBER OF FORMATS
DESIRED ";N
110 F X=1 TO N
120 FORMAT mdv1_
130 END FOR X
140 PRINT
150 FOR X=1 TO N
160 FORMAT mdv2_
170 END FOR X
```

==================================

continued from -page 2-

Attention, all potential advertisers: SYNAPSE needs your support! Synapse is a non-profit publication and exists mostly on advertising revenue. On the back page of this publication is the advertising rates. I know that some publications give away free advertising space (they do so at the expense of the readers pocket); but Synapse cannot do so. Please support this publication; it needs your advertisements. The only way the readers know what you have for sale is for you to advertise. My own experience with this publication shows that it does have many readers looking for the very products you offer for sale. So come on, how about some ads?

On page 18 is a notice of Computerfest in Cincinnati, Ohio. This get together is being sponsored by the users of Ohio, Indiana and Kentucky and looks very promising. I will be going as a representative of the Central Penn group and Synapse editor. Check it out! Write to the address shown on page 18 for more information. Come and join us; it promises to be exciting and informative.

Would readers be interested in having the printed programs in this newsletter available on tape ready to run? If so please let me know; if the response is good enough then maybe I'll start an inexpensive (not for profit) service of providing the programs on tape as well as publishing them.

There is a "new" computer breaking ground with Timex/Sinclair enthusiasts as well as non T/S users: the QL. The hottest computer for T/S users, now that the price is reasonable (299.00 on the average). One fine machine with two built in microdrives and 4 pieces of interactive software (all comes in the same package!) Excellent basic (Superbasic) with a great deal of support already there for hardware and software. In the coming issues I'll begin to cover the various features of software and hardware for the QL.

There is an exciting new product being released for the TS2068 called Non Volatile Memory board. This board has 32k of bank-switched memory that can be EXROM or DOCK. Selling initially for 109.00 it can be expanded with up to 64K total. Tom Bent deserves the credit for bringing this device to market! I have one and as I learn about it I'll tell you more.

As I write this column I hear the tragic news of the Space Shuttle Challenger. May God grant peace to the 7 crew members who perished on the flight; may he give comfort to the families of those crew members. Amen.

continued on -page 20-

continued from -page 19-

I have been receiving questions concerning the use of the Tasman B Centronics Parallel Printer Interface in the Spectrum mode of emulated TS2068's. I do know that the software is the culprit; it needs some changes in the code in order for it to operate. If anyone out there knows what the changes are please let me know so that I can pass on the information.

For those of you who have Tasword II and the Aerco Centronics Printer Interface: you must make changes to the Tasword software in order for it to work with the Aerco Interface. (Tasword was designed for the Tasman interface) The changes are: POKE 57999,127: POKE 58001,103: POKE 58008,127: POKE 58014,219: POKE 58015,127. Make a backup copy before you run the program in case you make a mistake typing in the information. [from CATS January 1986].

Make these changes to the Aerco parallel printdriver software in order to use the Aerco Parallel Interface in the Spectrum emulation mode: POKE 64441,201: POKE 64521,84: POKE 64522,31. [from SUM April 1985]

There exists a myriad of pokes and peeks and commands for the TS2068 that are of great value but few people know about. The following list has been garnered from personal use, friends and the massive exchange newsletter collection of the Central Penn group. Many thanks to everyone for these tidbits.

(1) caps shift 3 will scroll two screen when you are doing a basic listing.

(2) if you don't like having quotes appear during a string input command then use this: INPUT LINE A$. No quotes! STOP will not work to stop your program!

(3) if you need the starting address of basic use this: PRINT PEEK 23635 + 256 * PEEK 23636

(4) if you would like to play with the keyboard click: POKE 23609,[a number between 1 and 255]

(5) to print on line 24: PRINT #0;"ANYTHING AT ALL": PAUSE 0: The pause 0 is necessary in order to read what you wish printed; otherwise, your message would disappear as fast as you put it there.

(6) if you are writing a large basic program with user defined graphics do this first: CLEAR 63255. This reserves the space you need for graphics preventing overwriting by your basic program.

(7) USR 15002 to get out of an infinite input loop without crashing

(8) unlimited lives for MANIC MINOR: POKE 35136,0 or POKE 35142,0 There are two different versions and hence two different pokes.

(9) inorder to make all outputs to your printer instead of the screen: OPEN #2;"P". This causes all print statements to be sent to your printer. CLOSE #2 will switch it back to normal.

What's new with Sinclair? How about a Spectrum 128. That's 128k of bankswitched memory. Or the Enigma which will have 3.5 inch disc drives and 1 megabyte of ram. The software available with the QL will be ROM based in the Enigma. Planned for May 1986 the package will be: computer, software, two drives, mouse, monitor and printer. More on this when I find out what's what.

If you are interested in amateur radio and T/S computers get in touch with: QZX
2025 O'Donnell Dr.
Las Cruces, NM 88001

For cleaner looking printing on your 2040 thermal printer use Radio Shack's printer paper. It is not as wide as the origional thermal paper sold by Timex but it is nice and white!

Error in the 2068 user manual: location 23681 is labelled as not being used. This is incorrect! 23681 is used with 23680 relating to the printer buffer. Poking 23681 with anything other than 91 while the 2040 printer is in use will cause the next line printed to be a blank line.

continued on -page 21-

continued from -page 20-

In the shuffle of converting my mailing list from tape to disc I seem to have lost some information. I have three subscribers who are not getting their newsletters because I have only the following partial information.

#1: Stan Adamson (sep/oct:86)

#2: Willi (nov/dec:86)

#3: James Inacker of NJ (sep/oct:86)

If anyone reading this has the slightest clue as to the address of the above people please contact me! In addition to those subscribers I have lost nearly all of the current addresses of dealers and a good number of potential subscribers. I know that mailing lists are very valuable and private commodities, but if someone out there is willing to make some sort of exchange or trade for mailing lists I am willing to listen. One possibility is the trade of free advertising for some specified period of time for the mailing list of a dealer. I would like to re-establish some of what I have lost in the transferal of files.

To find elapsed time in a program add the following lines to your program: 1 POKE 23672,0: POKE 23673,0 9999 PRINT INT((PEEK 23672 + 256 * PEEK 23673 + .5) * 100 / 60.1145 + .5) / 100 Start running your program at line 1 and to find elapsed time in seconds execute line 9999. This comes from CATS newsletter Sept 1985 by H. E. Weppler

EXCHANGE PUBLICATIONS:

The Central Pa. Users Group and Synapse exchanges publications with the following groups & organizations on a regular basis. Our thanks goes to these publications; to the people who make regular contributions to Synapse; and to the subscribers and advertisers of Synapse: they all make possible our continued existance. Remember: communication is the key! We need to know what you are doing with your computer, how you like this publication, and what you would like to read on these pages. Again thank-you. Robert Heil, editor.

TRIANGLE SINCLAIR USERS GROUP
c/o Doug Dewey; 206 James St.; Carrboro, NC 27510; monthly newsletter

SUM MAGAZINE:
3224 NW 30 Avenue; Gainesville, FL 32605; monthly magazine

PC WORLD NEWS BULLETIN:
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PO Box 438; Centerport, NY 11731-0438; monthly newsletter

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PO Box 36; Johnson City, NY 13790; bimonthly publication

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PO Box 725; Bladensburg, MD 20710; monthly newsletter

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Thomas B. Woods; PO Box 64; Jefferson, NH 03583; bimonthly journal

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ATLANTA T/S USER GROUP
c/o Bret Lanius; 1049 N. Carter Rd.; Decatur, GA. 30030; monthly newsletter

SINC-LINK
Toronto T/S Users Club; PO Box 7274 Stn. A; Toronto, Ont., M5W 1X9; Canada; bimonthly newsletter

ATSU HOME COMPUTER USERS
Ray Thornton, editor; PO Box 16274; Columbus, Ohio 43216; monthly newsletter

TIMELINEZ
PO Box 1312; Pacifica, Ca 94044; monthly newsletter

THE SINC TIMES
1707 King St.; Jacksonville, FL 32204; bimonthly newsletter

THE DATA EXPANSION
T/S Users Group of Fort Worth; c/o David Baulch; 4424 Geddes Ave.; Fort Worth, TX 76107; monthly newsletter

KEYBOARDS
TAS BAM Users Group; PO Box 644; Safety Harbor, FL 33572; bimonthly newsletter

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SEND TO: R & R Electronics c/o Robert Heil
1525 N. Ashwicken Ct., State College, Pa. 16801

continued from -page 3-

```
2621 PRINT "Watts = VOLTS X Amps
"'"Watts = P"'"Volts = E"'"Amps
= I"''"P = E x I"
2625 INPUT "INPUT Volts ";E
2630 PRINT AT 15,0;"P = ";E;" x ?"
2635 INPUT "INPUT AMPS ";I
2640 PRINT AT 15,0;"P = ";E;" x
";I;" = ";E*I;" Watts": RETURN
2670 PRINT "Watts = AMPS SQUARED
 X OHMS"''"Watts = P"'"AMPS = I"
'"Ohms = R"''"P = I x [up arrow
on h key]2 x R"
2675 INPUT "INPUT Amps ";I
2680 PRINT AT 15,0;"P = ";I;"
 [up arrow on h key]2 x ?"
2685 INPUT "INPUT Ohms ";R
2690 PRINT AT 15,0;"P = ";I;"
 [up arrow on h key]2 x ";R;
" =";I[up arrow on h key]2*R;
" Watts": RETURN
8500 PLOT 0,166: DRAW 255,0: PLO
T 0,163: DRAW 255,0: PLOT 0,160:
 DRAW 255,0: PLOT 0,159: DRAW 25
5,0: PRINT AT 1,((30-(LEN T$))/2
);"[shifted graphic on key 5]";
T$;"[graphic on key 5]";: PLOT
OVER 1;0,167: DRAW 255,0: RETURN
8600 PRINT #1;" Press Fire Butto
n To Continue  "
8610 IF STICK (2,1)=1 THEN RETURN
8620 GO TO 8610
```

I would like to announce that I am now the Sysop for Computerland of GAstonia's BBS. It is a public BBS open to anybody and online 24 hrs a day seven days a week except for maintance. Due to the fact that I'm the only T/S user of the BBS I'm not able to support the BBS with T/S software. But if you will just call and log on as a T/S owner I promise you I will have many T/S progams placed in the download section and keep T/S messages posted on the BBS. Would it not be nice not to have to type in one of my now famous long program listings? The number is 1-704-866-4648. Let's give Computerland a small taste of what a Sir Clive invasion is like.

Many Thanks
Charlie Day

continued from -page 15-

We welcome any questions from you and your readers and will make every effort to support you in your desire to print informative articles in your fine publication.

Sincerely, Jack

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